KEY DATA:

- **850** Employees
- **2** Sites
- Export: **75% of Sales**
Alstom in Croatia

Over 60 years of partnership in Croatia and SEE Area

History

1949: The beginning of the steam turbine production in Karlovac under the name Jugoturbina
1951: Gaining of De Laval marine turbines license (up to 45 000 HP)
1953: Gaining of De Laval steam turbines license (up to 2,5 MW)
1954: First steam turbine 12,5 MW in operation (in Croatia)
1956: Gaining AEG steam turbine license (65 MW)
1978: Applying API 621 Design
1982: Gaining BBC steam turbine license (up to 1200 MW)
1985: New hall for large steam turbines production in Karlovac
1991: Factory of steam turbines acquired by ABB Group – the new company under the name ABB Power Plants Ltd.
1999: ABB Power Plants and Alstom Power Generation segment merger
2001: The factory / company operates under the name Alstom Power Ltd.
2003: Alstom Power Ltd. changes the name to Alstom Croatia Ltd. The same year: System certification ISO 14001:2003
2005: EHS system certification OHSAS 18001:2005
2009: Celebration of 60 years of the company
2010 - ongoing: Intensive investments in capacity at Site Alstom Croatia

Corporate Social Responsibility

University of Applied Sciences in Karlovac: A partnership with University of Applied Sciences in Karlovac was established in 1992 and has lasted ever since. Alstom Croatia has been supporting the development of both study curriculum and practical lectures. Cooperation with the University of Karlovac has been utilized on the following projects: foundation of Mechatronics Department and Centre of Excellence (Centre of Excellence for education & transfer of technology in Mechatronics at the University of Applied Sciences & Technical School Karlovac). Alstom supports the funding of laboratory equipment and practical lectures for students & scholars.

University of Zagreb – Faculty of Mechanical Engineering and Naval Architecture: Long term cooperation with the goal of enhancing the link of science and technology to the real economy. Alstom Croatia participates in different activities with an aim of sharing the knowledge of new operating methods and tools for improvement of the development processes. Alstom Croatia and Faculty of Mechanical Engineering and Naval Architecture are combining efforts in joint research and executing development projects.

An Association for children with growth difficulties, Zvoncici: 2013 - Alstom has gave a support for the heating system on wood pellets for sensory rehabilitation centre in Karlovac, Croatia.
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Awards and Certification

Awards

- February 2011: «Golden Pine Marten» prize & Diploma – Croatian Chamber of Economy on Country level for the most successful company in Croatia in 2010
- April 2012: Recognition of District & Town (local level) for outstanding results and economic contribution to the local community in 2011

Certification


Power

Alstom Power activities in Croatia are related to Thermal sector, to support the power generation equipment market in Croatia and in South Eastern Europe Area.

Karlovac plant has a strong reference as a blades production centre and reconditioning of structural parts centre, for existing power plants or new power plants’ projects. Alstom Croatia has a been a qualified partner within the Alstom Group for the processes of all types of machining & welding. The most significant references have been acquired in supplying gas & steam turbine components (ST blades (RTB & ITB blades), GT Hot Gas components, exhaust housings, exhaust diffusers, turbine and compressor vane carriers, ST inner casings components, GT compressor blades).

Over 200 mechanical engineers in the Research & Development / Engineering centre are working in collaborative international teams on R&D activities, mechanical equipment field projects (gas & steam turbines design, reconditioning, quality control, field assessment, commissioning, operation & maintenance manuals) & electrical equipment (arrangement planning, design). Alstom Croatia has been present in the international turbo machinery market since 1949.

References have been acquired in numerous inspections, overhauls, modernization & service projects on the base of AEG, De Laval, JGT, BBC/ABB licenses, maintenance and project management, for utility and industry power plants. Alstom Croatia has provided 239 steam turbines from 1949 till now to worldwide locations.

References:

Manufacturing facility/Workshops (components)

- ALBA, COMBINED CYCLE POWER PLANT, Bahrain
- AFAM, GAS TURBINE POWER PLANT, Nigeria
- DIGHTON, COMBINED CYCLE POWER PLANT, USA
- ZUWEITINA, GAS POWER PLANT, Libya
- MIZUSHIMA, COMBINED CYCLE POWER PLANT, Japan
Ongoing projects:

- over 180 projects for gas & steam turbine components, including reconditioning & upgrading

**Thermal Services Local Unit**

- 2000: TE PLOMIN 2,2, Croatia: STEAM TURBINE 210 MW - design, manufacturing, assembly, commissioning
- 2003: TE-TO ZAGREB, COMBINED CYCLE POWER PLANT, Unit K, Croatia: STEAM TURBINE 66MW – design, manufacturing, assembly, commissioning
- 2007: STEAM TURBINE parts OOEM reverse engineering & spare parts manufacturing – first projects started
- 2006: HE GOJAK, HYDRO POWER PLANT, Croatia: 3×21 MW, OOEM – retrofit with capital parts replacement
- 2009: TE-TO SKOPJE, Industrial Power Plant, FYROM: STEAM TURBINE 2×15 MW, OEM – turbine islands rehabilitation, new control systems installation
- 2009: NE KRSKO, NUCLEAR POWER PLANT, Slovenia: STEAM TURBINE island, 696 MW – extension of 5-year LTSA
- 2010: EL-TO ZAGREB, COMBINED CYCLE POWER PLANT, Croatia: GAS TURBINE 2×26 MW, OOEM – B&C inspections with capital parts rehabilitation
- 2010: TENT, TPP KOLUBARA, Unit 5, Serbia: STEAM TURBINE 65 MW – rehabilitation with reblanding
- 2011, 2012: TE-TO ZAGREB, COMBINED CYCLE POWER PLANT, Unit C, Croatia: STEAM TURBINE 120 MW, OOEM – boiler modernization with NOx reduction
- 2011: TENT, TPP KOLUBARA, Unit 5, Serbia: STEAM TURBINE 65 MW - existing STEAM TURBINE control & protection system modernization
- 2011: NE KRSKO, NUCLEAR POWER PLANT, Slovenia: STEAM TURBINE island, 725 MW –5-year LTSA
- 2012: EL-TO ZAGREB, COMBINED CYCLE POWER PLANT, Croatia: GT 2×26 MW, OOEM – B&C inspections with capital parts rehabilitation
- 2012: TE PLOMIN 1, Croatia: STEAM TURBINE 125 MW – major steam turbine inspection - delivery of spare parts, assembly
- 2012: HE DUBROVNIK, HYDRO POWER PLANT, Croatia: 2×108 MW, OEM – major hydro mechanical equipment on Unit A and Unit B rehabilitation ( with the delivery of spare parts)
- 2012: NE KRSKO, NUCLEAR POWER PLANT, Slovenia, STEAM TURBINE island, 727 MW – B-inspections
- 2012: THERMAL POWER PLANT TUZLA, Bosnia & Herzegovina: Unit 6, STEAM TURBINE 215 MW – revitalization and modernization of the turbine-generator set

Alstom in Croatia

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- MAJUBA, CONVENTIONAL STEAM POWER PLANT, South Africa
- CASTEJON, COMBINED CYCLE POWER PLANT, Spain
- SENOKO, COMBINED CYCLE POWER PLANT, Singapore
- BAYSIDE, COMBINED CYCLE POWER PLANT, USA
- VALLE DE MEXICO, COMBINED CYCLE POWER PLANT, Mexico
- DOCK SUD, COMBINED CYCLE POWER PLANT, Argentina
Ongoing projects (2013):

- TE SOSTANJ, THERMAL POWER PLANT, Slovenia: New 600 MW TG Set erection
- HPP ZAKUCAC, HYDRO POWER PLANT, Croatia: Reconstruction of Hydro Mechanical Equipment, Units B, C & D
- TE – TO Osijek, THERMAL POWER PLANT, Croatia: C Inspection of 4S MW Steam Turbine
- TE TOL LJUBLJANA, THERMAL POWER PLANT, Slovenia: Inspections on STs - Units 28, 42 and 50 MW
- TE OSLOMEJ, THERMAL POWER PLANT, FYROM: Generator site repair of 125 MW Unit

R&D / Engineering Unit

- Development of gas turbine new structural components, including all casings, intake / exhaust sections and base frame
- Development of instrumentation & control systems for gas turbine thermal block and auxiliary systems
- Development of arrangement, piping, aero systems for the new gas turbine power plants
- Development of gas turbine combustion chambers including hot gas path parts, carrier structures and fuel injection systems
- Lifetime prediction for gas turbine components including lifetime assessment, cooling concepts and heat transfer analyses
- Standardization of gas turbine documentation including work instructions, internal standards and design of standard parts
- Developing & testing protection logic and mimics (MFC3000 & CE3500 systems) for all types of Alstom gas turbines
- Design of modular steam turbine control logic for control, operation and protection
- Modelling and simulations of the processes and systems for steam turbines and auxiliaries
- Alstom Plant Support Centre (PSC) – part of internal engineering network which provides support to Alstom customers 24/7
- Development of reconditioning processes of the hot gas parts for Alstom gas turbine fleet
- Reverse engineering – GT hot turbine and compressor blading, steam turbine blading
- Design, upgrade, inspection recommendations for gas turbine auxiliary systems and fuel modules of Alstom gas turbine fleet
- Arrangement planning and piping engineering for more than 50 Alstom combined cycle and fossil power plant projects
- Update of Operation & Maintenance documentation for gas and steam turbines, auxiliary systems and generators for the entire Alstom fleet (IPLs, CFSIs)
- Advanced know-how of conventional manufacturing processes and continuous investigation of novel technologies
- Application of high-end development / simulation platforms
Transport representative office in Croatia has been taking an active part in preparation and bidding numerous projects in Croatia and South Eastern Europe Area, for railway Infrastructures and rolling stock business. Alstom is one of the key player in urban transport and very interested in tram and metro projects in the Area (Belgrade, Ljubljana, Skopje, Sarajevo....).

Submitted offer:

_Croatia:_

- 2010: Zagreb Main Station new electronic interlocking
- 2012: Novska-Okučani, signaling project

Ongoing tenders:

_Croatia:_

- Corridor 5, section Dugo Selo – Križevci, Reconstruction and ew track

_Slovenia:_

- ERTMS on the Infrastructure of Corridor D-D - Alstom to provide balisas for complete line
- ERTMS development on the rolling stock of Slovenske železnice

_Serbia:_

- Ready to participate to Signaling Projects
- Belgrade Metro Project

_Macedonia:_ Tramway project in City of Skopje

_Alabnia:_ Tramway project in Tirana